Impact of Coal Mining on the Livelihood of the People of Ramgarh Coalfield Region, Jharkhand

SYNOPSIS FOR THE Ph.D REGISTRATION IN GEOGRAPHY, FACULTY OF SOCIAL SCIENCE

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A BRIEF INTRODUCTION OF THE RESEARCH TOPIC

Coal mining plays a key role in developing the economic backbone of many developing countries, such as India, although on a local scale. Coal mining industries enormously influence the surrounding environment and livelihood. An open cast coal mine severely enhances the dust particles in the local atmosphere over time and in turn, affects the fertility of the surrounding lands, causes respiratory problems among the local communities, water bodies in the area has been contaminated by toxic chemicals, makes unfit for human consumption and agriculture use. This has had a significant impact on the livelihoods of people who depend on agriculture and other allied activities for their survival.

Additionally, the socio-economic conditions of the local community go through a massive concern due to land acquisition, migration of people and insecurity of jobs. In this present work, an effort has been made to understand the effect of open cast coal mining on the livelihood of the people in Ramgarh coalfield Region of Jharkhand. The livelihood pattern of the local community has significantly changed from pre-mining to post-mining, the immediate effect helped to increase the financial capacity of local people. However, the discontinuity in coal extraction is also the major cause for the job insecurity and vulnerability in socio-economic life.

STATE OF THE ART

Coal is a natural resource which is a major source of energy. As coal is one of the most highly demanded fossil fuels of the world, coal mining industries are well-known to shape the economy of a country. The Coal Mining Industry generates colossal measures of revenue and electricity for the country. India has a long history of commercial coal mining covering nearly 220 years starting from 1774 by M/S sumner and Hastly of east India company in Raniganj coalfield along the western bank of river Damodar. In India, Damodar River basin is a repository of about 46% of Indian coal reserve, mainly bituminous and sub- bituminous grade. The important coalfields of this basin are namely Jharia, Raniganj, North and South Karanpura, East and West Bokaro and Ramgarh. The mining sector has been major source of revenue for the government of India. It fulfils the demands of about 67% of total commercial energy.

NCERT (2022) “In India, Coal is the most abundantly available fossil fuel. It provides a substantial part of the nation's energy needs. It is used for power generation, to supply energy to industry as well as for domestic needs. India is highly dependent on coal for meeting its commercial energy requirements".[1]

The Opening of the mine has several Economic, Environmental and Social Consequences at the National, State or Provincial and local level. Mines not only create direct and indirect Employment Opportunities, but also generate foreign exchange earnings and tax revenues. New Mining Projects provide in addition to business activities, basic facilities like road, school and health clinics to remote areas. Mining has also a range of indirect impact, positive and negative on the Local Community and their Livelihoods. It displaces them from their own land, they could lose their homes, agricultural land and forest-based Livelihood, their Natural Environment degrades day by day, Creating air and Water pollution; Skilled Labour

migrates to work in mines, creating tension between the local people and outsiders. Sometimes, the benefits may be unevenly shared, or they may not compensate for the loss of existing Livelihoods and damage to Environment and Culture.

Livelihood in its simplest sense is a means of gaining a living and comprises the capabilities assets and activities required for a means of living. A Livelihood is sustainable which can cope with and recover from stress and shocks maintain or enhance its Capabilities and assets and provide sustainable Livelihood opportunities for the next generation, which contributes net benefits to other livelihoods at the local and global levels and in the short and long term.

The Impact of mining on the Livelihood of the Local people is largely neglected often, all the benefit accurse to the Mining Industries and its workforce, depriving the rest of the Population bear only the costs while the provision of benefit is lopsided

The present synopsis titled "Impact of Coal Mining on the Livelihood of the people of Ramgarh coalfield Region, Jharkhand" deals with how Coal Mining persuades livelihood of peoples, residing in Ramgarh coalfield. It is often characterised by the loss of livelihood opportunities, land acquisition problem, displacement, environment pollution, loss of biodiversity, and so on (Das and Mishra, 2015).

Coal Mining Projects have some positive repercussion like changes in employment patterns, income opportunities for the people, infrastructural changes, community development, development in communication, transport, the educational system, commerce, recreation and medical facilities etc. It is thus clear that coal mining leads positively regarding economic development as well as greater self reliance through increased mining of the available mineral resources.

Jones (1993), “the majority of coal-related projects have potential to affect the environment to a significant degree. Opencast methods of coal extraction can directly affect terrestrial and aquatic ecosystems.”[2]

Chambers and Conway (1996), “A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living”. [3]

On the other hand, Coal mining adversely affects the ecosystem as a whole. Mining activity puts tremendous impact on local flora, fauna and human being. The effect of mining on the ground water level, silting of surrounding water bodies, land degradation and human health are also a great concern. It also has an impact on socio-economic aspect like jobless, Reduction in cropland, displacement among the people residing in and around coal mining area.

Irene Mwakesi et. al (2020) "Diverse economic activities have grown as the result of the mining industries in the area. Both genders are equally engaged in agriculture and diversification of economic activities for household sustainability".[4]

Rawashdeh. Al. Ram et. al.(2001) "Mining Operations routinely cause serious social health and environmental impact. Development indicators in the southern mining territory of Jordan including unemployment rate, human development Index, poverty line, health, Education and Environment have underperformed those of the non- mining region in the northern and central parts of the country. Improving standard of living, education, health and environmental standard of local communities would help to attract further investment and thereby sustain the commodity after mine closure".[5]

Kumar Ravi(2015)"Mining's perpetration of poverty instead of prosperity has a lot to do with the lack of policies and systems for distributing the benefits of mining and the way land acquisition resettlement and rehabilitation have been managed over the years. The performance of India's major mineral-bearing states in managing land acquisition and displacement can be summed up in one word: dismal. People deprived of their land 50 years ago due to mining are still waiting for their compensation".[6]

Goswami Sribas (2015) "Mining has a significant impact on the economic, social and environmental fabric of adjoining areas. Although mining activities bring about economic development in the area, it also causes land degradation that creates ecological and socio-economic problems".[7]

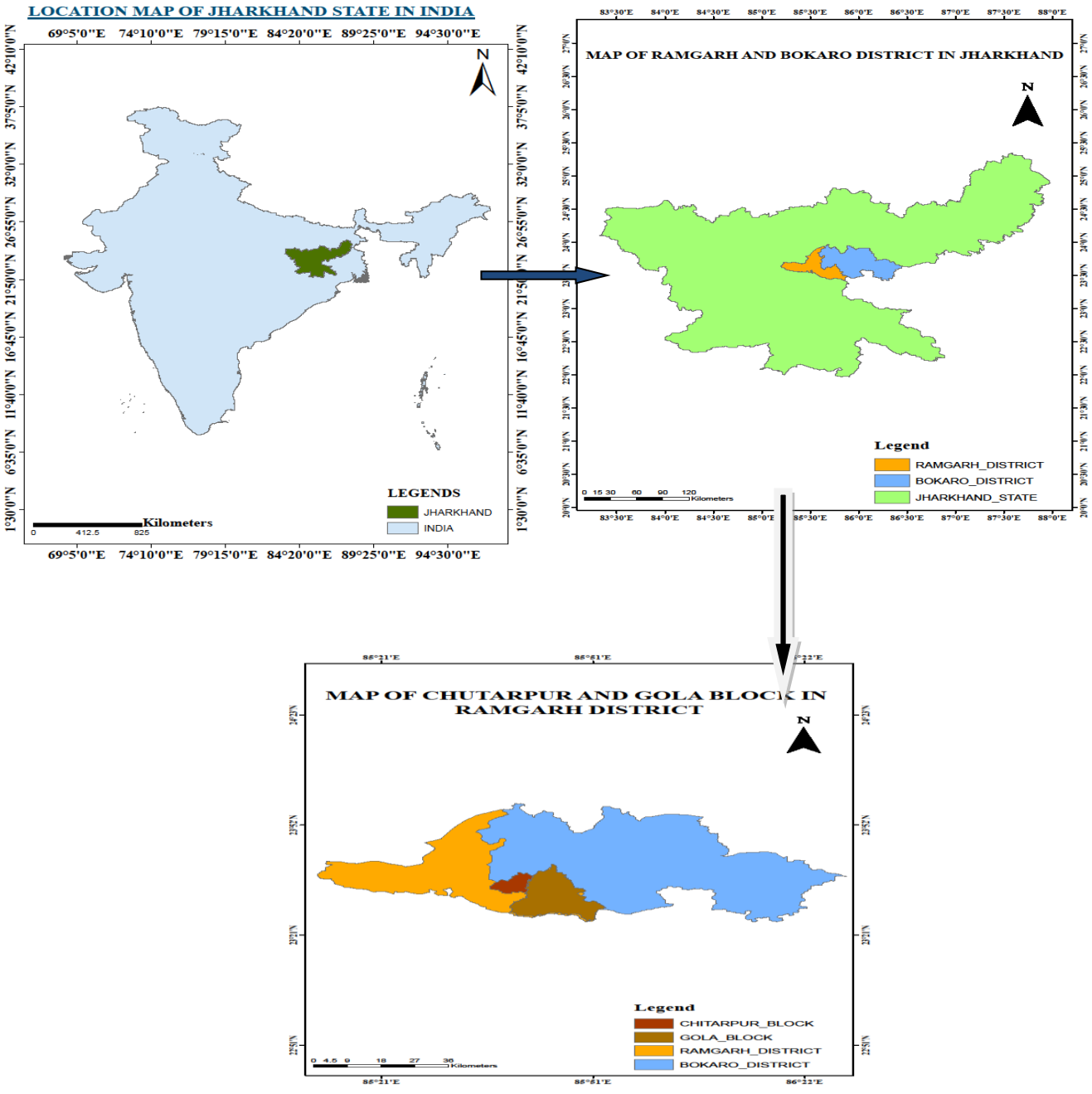
Ramgarh Coalfield is situated between 23°35'N to 23°42'N and 85°30'E to 85°45'E,covers Mandu, Gola and chitarpur block of Ramgarh and Gumia block of Bokaro District in the Eastern Part of India, is a more or less in triangular shape. It is extending over an area of 98 sq. km in upper reaches of the Damodar Valley. The Coalfield Eastern Side is adjacent to the Ramgarh cantonment Area. The Rocks in this area belongs to the Gondwana sequence comprising only the lowest i.e Talchir and Damuda groups.

In the **Rajrappa Coal Mining Area**, consists of few Opencast Coal Mines and One of the largest Coalfield regions in the Ramgarh District of Jharkhand State and Operating for the last 4 decades by Central Coalfields Limited (CCL). The Rajrappa Coal Mining Area, in the bank of Damodar River, there is a Coal Reserve of 72 million tonnes with ongoing annual Production of 6.0 million tonnes, as reported by Geological Survey of India.

Singh, A.K (2018) “Consequently, discontent among the mining affected people mounts up. Rims of paper have been consumed in writing about the unjust and inappropriate treatment meted out to the hapless indigenous and local communities who are uprooted and simply displaced from their lands of ancestors, to prepare which they toiled for generations. Paradoxically, all this is done in the name of national interest and the economic uplift, expecting that benefits would trickle down to those who are being uprooted and displaced, without proper and adequate rehabilitation and restoration of livelihood.”[8]

Oskarsson Patrik et. al(2019) "A cumulative land grab to explain how it has been possible to divert large land areas for coal mining at a time of heightened land contestation in India. By linking cumulative land grabs to the wider political economy of energy security we have attempted to show both connections between land-use changes in Ramgarh and key national policy goals, and the flexibility and insularity afforded to individual mines which have been able to expand wherever resistance has been lowered".[9]

LOCATION MAP
OF
CHITARPUR AND GOLA BLOCK IN RAMGARH DISTRICT



Source: Census of India 2011

PROBLEMS TO BE INVESTIGATED

In this research following are some key problems, which needs to be investigated.

1. To decipher the changes in pattern of Livelihood Opportunities in the Study Area.
2. To what extent the Rehabilitation and Resettlement affects the Livelihood in Study Area.
3. To what extent Developmental works done by CCL to enhance the Livelihood in Study Area.
4. To analyse the best Suggestion for mitigating the negative impact on Livelihood of the populace.

OBJECTIVES OF THE INVESTIGATION AND MOTIVATION

1. To find out trends of Livelihood pattern in study area from Pre-mining to Post-mining.
2. To examine the effects of Coal Mining Pollution on Livelihood of people in study area.
3. To study the influence of mining on Livelihood Opportunities in study area.
4. To examine the developmental works done by Central Coalfield Limited in enhancing the Livelihood of people.

The Coal Mines in Ramgarh Coalfield has several Economic and Social Consequences at the local level. Mines not only create direct and indirect Employment Opportunities, but also generate foreign exchange earnings and tax revenues. New Mining Projects provide in addition to business activities, basic facilities like road, school and health clinics to remote areas. Mining has also a range of indirect impact, positive and negative on the

Local Community and their Livelihoods. It displaces them from their own land, they could lose their homes, agricultural land and forest-based Livelihood, and their Natural Environment degrades day by day due to pollution created by coal mines. This Research also provides data to Policymakers and regulators to develop and enforce effective laws and regulations that balance economic interests with social concerns.

RESEARCH HYPOTHESIS

1. Coal mining has adversely affected the Livelihood Opportunities in study area.
2. Rehabilitation and Resettlement affects the Livelihood of people in study area.
3. Developmental works done by Central Coalfield Limited has enhanced the Livelihood of people in study area.

RESEARCH DESIGN AND METHODOLOGY:

(a) Selection of the Field

Jharkhand is known for its abundant coal reserves, making it a crucial hub for coal mining activities in India. Many people in Jharkhand rely on coal related activities for their livelihoods, such as mining, transportation, and ancillary Services.

The study area is Ramgarh Coalfield which covers Chitarpur ,Gola and Mandu block of Ramgarh and Gumia block of Bokaro. Out of the 4 blocks, Chitarpur blocks and Gola block of Ramgarh are to be selected for the survey. According to census 2011, the population of Chitarpur Block is 70701 and total number of households is 12633

whereas the population Gola block is 149810 and total number of household is 28485. From the selected blocks, 8 villages/towns are to be selected.

(b)Sample Size and Selection of Informants

Sample size will be 25 households each from eight selected villages/towns would be surveyed to get the first hand information about the livelihood conditions of the people. All together 200 households from the entire study area are to be selected.

Multistage sampling Method employed to select samples from Ramgarh Coalfield and Rajarappa Coal Mine is the cluster for study. Firstly, out of four blocks, two blocks i.e. Gola and Chitarpur Block have been selected. Secondly, from the 111villages/towns of two blocks, 8 villages/towns have been selected for Sampling. Thirdly, Random sampling as used to select household from the selected village to insure respondent randomization for the interviews. Fourthly, 1 Respondents are selected from each household included a household member from age of 18 year and above mainly the father, or the mother and in case of their absence, daughter or son.

TENTATIVE CHAPTERIZATION

- Introduction
- Chapter I - Geographical Background
- Chapter II- Trends of Livelihood Pattern in Study area from Pre- Mining to Post-Mining.
- Chapter III - Influence of Mining on Livelihood Opportunities.
- Chapter IV- Impact of Rehabilitation and Resettlement on Livelihood of People in Study area.

- Chapter V- Role of Central Coalfield Limited in the enhancing the Livelihoods of People in Study area.
- Chapter VI- Sample Study on Livelihood of Ramgarh Coalfield Region.
- Chapter VII- Suggestions and Recommendations.
- Conclusion
- Reference
- Appendix

ANALYSIS OF DATA

Inference statistical analysis will be used for hypothesis testing.

Percentage and Bar Graph will be used for analysing the trends of Livelihood pattern in study area and the impact of Rehabilitation and Resettlement on Income sources, Assets and Resources.

Pie Chart diagram will be used to show the proportion representation of people involved in the different Livelihood Opportunities.

Correlation coefficient will be used to understand the relation between welfare initiative taken by central coalfield limited and enhancement of Livelihood conditions in people in study area.

T-test will be used to compare the relationship between the roles of Coal Mining in economic stability of people in study area.

Numerical data collected through surveys and questionnaires are analyzed by using statistical tests to identify patterns, relationships and trends.

SOURCES OF DATA AND TOOLS TO BE USE IN COLLECTION OF DATA

The study mainly addresses the repercussion created by Coal Mining in Livelihood of the people of Ramgarh coalfield on the basis of different indicators. Thus, this study is both Qualitative and Quantitative in nature.

Following tools and technique will be in the collection of data:

- PRIMARY DATA
  - primary survey
  - personal interview

- SECONDARY DATA
  - Census of india,2011
  - Report of Ministry of Environment and Forest (MOEF).Central Pollution control board, New Delhi.
  - GIS and Remote Sensing Database comprising of Land Use and Land Cover Imager
  - Toposheet Map
  - District Statistical Handbook
  - Database Collected from Central Coalfield Limited and Coal Mines
  - Data provided by Published/Unpublished Research Thesis Journals.

SIGNIFICANCE OF THE STUDY

Coal mining is an important economic activity in country like India. Its impact is significant for the local economy. The study of these impacts can help in identifying measures to promote sustainable mining practices that provide economic benefits to local communities while minimizing negative impacts.

Coal mining can have significant social impacts such as displacement of communities, loss of livelihoods and social disruption. The study of these impacts can help in identifying measures to promote social sustainability and minimize negative impacts on affected communities.

Overall, the study on the impact of coal mining is important for promoting sustainable mining practices that protect the environment, public health, local economies and social sustainability.

IT'S REVELANCE TO THE PRESENT DAY PROBLEM AND NEED OF THE SOCIETY

The study of the impact of coal mining in livelihood of people is highly relevant to the present day problem as coal mining has been a major contributor to greenhouse gas emissions and air pollution, leading to negative impacts on the health of individuals and the surrounding ecosystems. Additionally, coal mining has often resulted in the displacement of local communities and the degradation of their traditional lands and resources.

Coal mining provides jobs to thousands of people in various regions. In some areas, it's a major source of employment and the livelihoods of these communities are closely tied to the industry.

Understanding the social, economic, and environmental impacts of coal mining is critical to address these concerns and developing effective policy solutions.

CONTRIBUTION TO THE EXISTING KNOWLEDGE

The research will add to the existing knowledge about the various impacts on the people in the coalfield regions. The health condition, social and economic changes that are likely to be on the people of the coal mining regions would be very significant as the results will indicate the existing conditions of the people.

The existing Knowledge on the impact of coal mining in Ramgarh highlights the urgent need for strong policies, regulation and enforcement mechanisms to mitigate the negative impacts of coal mining on the Environment, Local communities and Public health. There is also need for extensive research in the area to generate more in-depth Knowledge on the issue and inform evidence-based policies and practices.

FUTURE WORK

To minimize the adverse impact of coal mining on Environment, socio-Economic development and health of the people living in coal mining area. There are several avenues that future research can explore regarding the impact of coal mining:

1. Analysing the government policies and regulations in mitigating negative impacts on Livelihood in Coal Mining area.
2. Study of alternative sustainable livelihoods.
3. Developing sustainable mining practices**.**
4. Assessing coal mining impact on social dynamics.

Many new mines are opening up and are being proposed. So we can say that there is need for sustainable approach in this region so that we should protect the forest, land and water from being contaminated and also this region is having the possibility to develop as an industrial town.

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